Office of Pesticide Programs (OPP)
Environmental Protection Agency, 1200 Pennsylvania Ave., NW.,
Washington, DC 20460-0001, Attention: Docket ID number OPP-2004-0159

Metam Sodium Application for Sewer Line Root Control

With regards to sewer line root control, post application exposure to MITC is greatly reduced by the foam application in use today. The foam application decreases the volume of metam sodium needed to contact and kill the portion of roots entering pipes through the crown of the pipe. Twenty gallons of foam is produced from one gallon of herbicide solution. The resulting foam only requires approximately thirty gallons of metam sodium to treat one mile of 8-inch I.D. sewer pipe. The majority of sewer line root treatments occur in 6-inch and 8-inch I.D. sewer pipe. The volume of metam sodium needed to effectively treat roots in sewer pipes is substantially less than treatments where metam sodium is applied in soil at the surface where MITC escapes to the atmosphere rapidly.

The risk of MITC escaping from cracks in sewers is far less than one might expect. There are many toxic gases contained in sewer pipes, the most common being H2S formed by anaerobic bacteria on pipe surfaces. But outside of the pipe structure, the amount of gases released is very little. Roads are built over sewer pipes and are necessary for maintenance and efficient land use. Additionally, flow in pipes keeps gases flowing with the water current. A far greater concern to sewer maintenance agencies is water and sand that seep in, overloading the capacity of pipes. Pipes with severe structural deficiencies like large cracks or offsets normally will be replaced, as opposed to treated for roots. Foam treatments are most effective when used to treat roots before large "tap-roots" have formed which open cracks and offsets in pipes. Contrary to popular belief, roots do not normally enter pipes through large cracks, instead they grow in through small pores, or hairline cracks in pipes, not visible to the eye. The roots enter the pipe growing one cell at a time until entering the pipe. The roots then grow more rapidly when exposed to nutrients in the space above the flow in the pipe. Left untreated chemically, these roots eventually open cracks and offsets in pipes. Mechanically pruning roots increases problems because mechanical root saws do not actually cut roots, instead they tear at roots opening cracks and joints in pipes further. Additionally roots grow back vigorously due to plant growth hormones produced to heal damaged root tissue. This causes roots to grow faster and larger every time they are cut.

Worker exposure to MITC when loading metam sodium in to foam application equipment is reduced by a suction loading system which draws ingredients from containers through a pump system in to the solution tank. This eliminates the need to pour or agitate liquid concentrates. The tanks used on foam generating equipment cannot be open since the product will produce foam in the tank and overflow if there are openings. Much of the PPE utilized during loading and application of metam sodium for sewer root treatment, is redundant with PPE requirements for workers who clean or maintain sewer pipes including boots, gloves, long sleeves and pants, protective eyewear. Further, sewer maintenance workers are normally required to have a certificate of training in collection systems maintenance which includes extensive safety training. State and federal law requires workers who enter sewer pipes and manholes to have supplied air, gas detectors, communication devises plus full protective clothing. This exceeds the requirements for loading mixing and applying metam sodium. Metam sodium sewer application equipment, manufactured by Douglas Products, does not require workers to physically manipulate the application hose. Instead hydro-jetting equipment is used to propel a hose with a specialized jetting/foaming nozzle which propels the hose through the sewer. When the hose is propelled through the sewer pipe, it is propelled downstream a way

from the manhole and worker. The flow in the pipe carries the foam and MITC away from the worker, reducing the risk of exposure to MITC.

Sewer maintenance agencies must have in place significant safety training for sewer workers. Workers utilize extensive PPE due to the risk of exposure to gases already contained in sewer pipes. Some gases in sewer pipes are even flammable risk, for this reason many sewer agencies now specify explosion proof inspection equipment who’s cameras are constructed of meterial that will not send off sparks in the sewer pipes during inspection. As already described, sewer workers are already working in an around an exceedingly toxic and hazardous environment and for this reason, they already have extensive PPE and safety training.

For over thrity years metam sodium has been used to treat roots in sewers. During that time thousands of miles of pipe have been treated with few accidents reported. Potential accidents have been reduced with the introduction of foam applications. Application equipment is now more user friendly. Application equipment manufactured by Douglas Products now utilizes hydraulic driven air compressors and liquid pumps. The hydraulics in this system are actuated by a single switch or valve, effectively eliminating the complexities of operating earlier foam application equipment.

Sincerely,

-Justin Fearn
Vaporooter Division